

SEQUENCE LISTING.

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<110> American Cyanamid Company

<120> Vaccines Containing Recombinant Pilin Against Neisseria
      Gonorrhoeae or Neisseria Meningitidis

<130> 33377-00/PCT

<140>
<141>

<160> 24

<170> PatentIn Ver. 2.0

<210> 1
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Chimeric of
      Neisseria Meningitidis Class I and Neisseria
      Gonorrhoeae

<220>
<221> CDS
<222> (1)..(501)

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Met Asp Thr Leu Gln Lys Gly Phe Thr Leu Ile Glu Leu Met Ile Val
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atc gcc atc gtc ggc att ttg gcg gca gtc gcc ctt ccc gcc tac caa      96
Ile Ala Ile Val Gly Ile Leu Ala Ala Val Ala Leu Pro Ala Tyr Gln
           20               25               30

gac tac acc gcc cgc gcg caa gtt tcc gaa gcc atc ctt ttg gcc gaa      144
Asp Tyr Thr Ala Arg Ala Gln Val Ser Glu Ala Ile Leu Leu Ala Glu
           35               40               45

ggt caa aaa tca gcc gtt acc gag tat tac ctg aat cac ggc gaa tgg      192
Gly Gln Lys Ser Ala Val Thr Glu Tyr Tyr Leu Asn His Gly Glu Trp
   50               55               60

ccc ggc aac aac act tct gcc ggc gtg gca tct tct tca aca atc aaa      240

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Pro Gly Asn Asn Thr Ser Ala Gly Val Ala Ser Ser Ser Thr Ile Lys
 65                               70                               75                               80

ggc aaa tat gtt aag gaa gtt aca gtc gca aac ggc gtc att acc gcc 288
Gly Lys Tyr Val Lys Glu Val Thr Val Ala Asn Gly Val Ile Thr Ala
                               85                               90                               95

aca atg ctt tca agc ggc gta aac aaa gaa atc caa ggc aaa aaa ctc 336
Thr Met Leu Ser Ser Gly Val Asn Lys Glu Ile Gln Gly Lys Lys Leu
                               100                               105                               110

tcc ctg tgg gcc aag cgt caa gac ggt tcg gta aaa tgg ttc tgc gga 384
Ser Leu Trp Ala Lys Arg Gln Asp Gly Ser Val Lys Trp Phe Cys Gly
                               115                               120                               125

cag ccg gtt acg cgc acc gac gcc aaa gcc gac acc gtc gcc gcc gcc 432
Gln Pro Val Thr Arg Thr Asp Ala Lys Ala Asp Thr Val Ala Ala Ala
                               130                               135                               140

gcc aag acc gcc gac aac atc aac acc aag cac ctg ccg tca acc tgc 480
Ala Lys Thr Ala Asp Asn Ile Asn Thr Lys His Leu Pro Ser Thr Cys
145                               150                               155                               160

cgc gac gca agt gat gcc agc taa
Arg Asp Ala Ser Asp Ala Ser
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&lt;210&gt; 2

&lt;211&gt; 167

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;400&gt; 2

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Met Asp Thr Leu Gln Lys Gly Phe Thr Leu Ile Glu Leu Met Ile Val
 1                               5                               10                               15

Ile Ala Ile Val Gly Ile Leu Ala Ala Val Ala Leu Pro Ala Tyr Gln
                               20                               25                               30

Asp Tyr Thr Ala Arg Ala Gln Val Ser Glu Ala Ile Leu Leu Ala Glu
                               35                               40                               45

Gly Gln Lys Ser Ala Val Thr Glu Tyr Tyr Leu Asn His Gly Glu Trp
                               50                               55                               60

Pro Gly Asn Asn Thr Ser Ala Gly Val Ala Ser Ser Ser Thr Ile Lys
 65                               70                               75                               80

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Gly Lys Tyr Val Lys Glu Val Thr Val Ala Asn Gly Val Ile Thr Ala  
                                     85                                    90                                    95

Thr Met Leu Ser Ser Gly Val Asn Lys Glu Ile Gln Gly Lys Lys Leu  
                                     100                                    105                                    110

Ser Leu Trp Ala Lys Arg Gln Asp Gly Ser Val Lys Trp Phe Cys Gly  
                                     115                                    120                                    125

Gln Pro Val Thr Arg Thr Asp Ala Lys Ala Asp Thr Val Ala Ala Ala  
                                     130                                    135                                    140

Ala Lys Thr Ala Asp Asn Ile Asn Thr Lys His Leu Pro Ser Thr Cys  
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Arg Asp Ala Ser Asp Ala Ser  
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<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Chimeric of  
           Neisseria Meningitidis Class II and Neisseria  
           Gonorrhoeae

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<221> CDS

<222> (1)..(510)

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atc gcc atc gtc ggt atc ttg gca gcc gtc gcc ctg ccc gca tac caa 96  
 Ile Ala Ile Val Gly Ile Leu Ala Ala Val Ala Leu Pro Ala Tyr Gln  
                                     20                                    25                                    30

gac tac acc gcg cgc gcc caa atg tcc gaa gcc ctg act ttg gca gaa 144  
 Asp Tyr Thr Ala Arg Ala Gln Met Ser Glu Ala Leu Thr Leu Ala Glu  
                                     35                                    40                                    45

ggt caa aaa tcc gca gtg atc gag tat tat tcc gac aac ggc aca ttc 192

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Gly Gln Lys Ser Ala Val Ile Glu Tyr Tyr Ser Asp Asn Gly Thr Phe
   50                               55                               60

ccg aac agc aat act tcc gca ggt att gct gcc tct aac gag att aaa   240
Pro Asn Ser Asn Thr Ser Ala Gly Ile Ala Ala Ser Asn Glu Ile Lys
   65                               70                               75                               80

ggt aag tat gtg gca tcg gtt aag gtt gaa ggt aat gcc tct gtt gct   288
Gly Lys Tyr Val Ala Ser Val Lys Val Glu Gly Asn Ala Ser Val Ala
                               85                               90                               95

tct att acc gct acc atg aac tct agt aat gtg aat aag gac atc aaa   336
Ser Ile Thr Ala Thr Met Asn Ser Ser Asn Val Asn Lys Asp Ile Lys
                               100                               105                               110

ggt aaa acc ttg gta ctc gtc ggc aaa caa aac tcc ggt tcg gta aaa   384
Gly Lys Thr Leu Val Leu Val Gly Lys Gln Asn Ser Gly Ser Val Lys
                               115                               120                               125

tgg ttc tgc gga cag ccg gtt acg cgc gac aac gcc gac aac gac gac   432
Trp Phe Cys Gly Gln Pro Val Thr Arg Asp Asn Ala Asp Asn Asp Asp
                               130                               135                               140

gtc aaa gac gcc ggc aac aac ggc atc gaa acc aag cac ctg ccg tca   480
Val Lys Asp Ala Gly Asn Asn Gly Ile Glu Thr Lys His Leu Pro Ser
                               145                               150                               155                               160

acc tgc cgc gat acg tca tct gat gcc aaa                               510
Thr Cys Arg Asp Thr Ser Ser Asp Ala Lys
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&lt;210&gt; 4

&lt;211&gt; 170

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;400&gt; 4

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Met Glu Ala Ile Gln Lys Gly Phe Thr Leu Ile Glu Leu Met Ile Val
   1                               5                               10                               15

Ile Ala Ile Val Gly Ile Leu Ala Ala Val Ala Leu Pro Ala Tyr Gln
                               20                               25                               30

Asp Tyr Thr Ala Arg Ala Gln Met Ser Glu Ala Leu Thr Leu Ala Glu
   35                               40                               45

Gly Gln Lys Ser Ala Val Ile Glu Tyr Tyr Ser Asp Asn Gly Thr Phe

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Pro	Asn	Ser	Asn	Thr	Ser	Ala	Gly	Ile	Ala	Ala	Ser	Asn	Glu	Ile	Lys
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Gly	Lys	Tyr	Val	Ala	Ser	Val	Lys	Val	Glu	Gly	Asn	Ala	Ser	Val	Ala
			85						90					95	
Ser	Ile	Thr	Ala	Thr	Met	Asn	Ser	Ser	Asn	Val	Asn	Lys	Asp	Ile	Lys
			100					105					110		
Gly	Lys	Thr	Leu	Val	Leu	Val	Gly	Lys	Gln	Asn	Ser	Gly	Ser	Val	Lys
		115					120					125			
Trp	Phe	Cys	Gly	Gln	Pro	Val	Thr	Arg	Asp	Asn	Ala	Asp	Asn	Asp	Asp
	130					135						140			
Val	Lys	Asp	Ala	Gly	Asn	Asn	Gly	Ile	Glu	Thr	Lys	His	Leu	Pro	Ser
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				165					170						

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<210> 6  
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<400> 7

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27

<210> 9

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<213> Neisseria gonorrhoeae

<400> 9

ggctctagat aaacagtaat acaagggg

28

<210> 10

<211> 28

<212> DNA

<213> Neisseria gonorrhoeae

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28

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<210> 12

<211> 39

<212> DNA

<213> Neisseria Meningitidis Class I

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<213> Neisseria Meningitidis Class I

<400> 18

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<211> 37

<212> DNA

<213> Neisseria Meningitidis Class II

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<213> Neisseria Meningitidis Class II

<400> 20

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<213> Neisseria gonorrhoeae

<400> 22

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<210> 23

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<400> 23



gcggccggat ccggtcattg tccttatttg gtgcggc

37

&lt;210&gt; 24

&lt;211&gt; 22

&lt;212&gt; PRT

&lt;213&gt; Neisseria gonorrhoeae

&lt;400&gt; 24

Glu Ala Ile Leu Leu Ala Glu Gly Gln Lys Ser Ala Val Thr Glu Tyr  
1 5 10 15

Tyr Leu Asn His Gly Lys  
20